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Thomas Mammone

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Karen A. Lowney, Esq.
ESTEE LAUDER COMPANIES
125 Pinelawn Road
Melville, NJ 11747

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UNITED STATES PATENT AND TRADEMARK OFFICE

**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Ex parte
THOMAS MAMMONE, DONALD F. COLLINS,
and DAVID C. GAN

Appeal 2007-4476
Application 09/925,333
Technology Center 1600

DECIDED: February 13, 2008

Before TONI R. SCHEINER, DONALD E. ADAMS, and DEMETRA J.
MILLS, Administrative *Patent Judges*.

SCHEINER, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134 from a final rejection of claims 1, 4-7, 10-14, and 17-19, all the claims remaining in the application. We have jurisdiction under 35 U.S.C. § 6(b). We affirm.

STATEMENT OF THE CASE

The claims on appeal are directed to “a method of exfoliating skin which comprises applying to the skin an exfoliant-effective amount of a . . . mannose phosphate” (Spec. 2), and to “a method of enhancing the synthesis of glycosaminoglycans, the main water-binding materials in skin by applying to the skin an effective amount of a [mannose phosphate]” (*id.*).

The claims stand rejected under 35 U.S.C. § 102(b) as anticipated by Ferguson¹ (Ans. 3).

Appellants present separate arguments for the following groups of claims: claims 1 and 4-6 (Group I); and claims 7, 10-14, and 17-19 (Group II). We select claims 1 and 7 as representative of their respective groups for the purpose of deciding this appeal. Claims 4-6 will stand or fall with claim 1, and claims 10-14 and 17-19 will stand or fall with claim 7, as provided by 37 C.F.R. § 41.37(c)(1)(vii) (2006).

Claims 1 and 7 read as follows:

1. A method of exfoliating the skin comprising applying to the skin a composition containing an effective amount of a mannose phosphate.
7. A method for increasing levels of glycosaminoglycans in skin comprising applying to the skin in need of such increase a composition containing an effective amount of a mannose phosphate.

¹ U.S. Patent 5,520,926 to Ferguson, issued May 28, 1996.

FINDINGS OF FACT²

1. Exfoliation is the process, either natural or enhanced, by which cells at the outermost layer of the skin are sloughed off to expose younger, underlying cells (Spec. 1).
2. Glycosaminoglycans are “the main water-binding materials in skin . . . Enhanced synthesis of glycosaminoglycans results in increased water retention in the skin, and therefore, skin plumping and concurrent reduction in the appearance of lines and wrinkles in the skin” (Spec. 2).
3. According to the present Specification, the amount of mannose phosphate in a pharmaceutical or cosmetic formulation effective to produce exfoliation “will be in the range of from about 0.01 to about 10%, preferably from about 0.1-5%, most preferably about 0.5-3%, by weight of the total composition” (Spec. 3).
4. Further according to the present Specification, “[e]ffective amounts for increasing glycosaminoglycan levels are in the same broad ranges as for exfoliation, with the most preferred range being 0.01 to about 1%” (Spec. 5).
5. Ferguson describes topical application of mannose phosphate to “wounds, whether arising through surgery or otherwise, including severe abrasions lacerations and burns . . . [and] fibrotic skin disorders, e.g., photo-damage” (Ferguson, col. 4, ll. 28-33 and 54-55).
6. “Preferably the mannose phosphate is applied in 10-60 mM concentration to the affected area at least twice per day for at least the first three days of treatment” (Ferguson, col. 4, ll. 62-65).
7. The Examiner asserts that the amounts of mannose phosphate used in Ferguson’s examples “appear to be within the scope of the amounts of

² Abbreviated “FF”.

mannose phosphate set forth in the instant claims” (Ans. 3-4), and Appellants do not dispute this point.

DISCUSSION

“[W]hen considering a prior art method, the anticipation doctrine examines the natural and inherent results in that method without regard to the full recognition of those benefits or characteristics within the art field at the time of the prior art disclosure.” *Perricone v. Medicis Pharm. Corp.*, 432 F.3d 1368, 1378 (Fed. Cir. 2005).

The Examiner rejected claims 1, 4-7, 10-14, and 17-19 under 35 U.S.C. § 102(b) as anticipated by Ferguson, on the basis that Ferguson discloses applying mannose phosphate to photo-damaged skin (FF 5), in amounts asserted to be effective to produce exfoliation and increased levels of glycosaminoglycans (FF 3, 6, 7), and therefore inherently meets the limitations of the claims.

Appellants argue that “the present invention addresses application of the mannose phosphate to a type of skin different from that disclosed in the reference, [therefore] there can be no anticipation of the present claims by the reference” (Br. 11).

Thus, the issue is not whether Ferguson’s mannose phosphate formulations, if applied to skin, would produce exfoliation. Rather, the issue is whether Ferguson describes applying mannose phosphate to the types of skin required by the claims.

Claims 1 and 4-6

Appellants argue that “[t]he tissue to which a mannose phosphate would be applied according to the reference (skin exhibiting wounds or tissue exhibiting fibrotic disease) clearly is not necessarily the same skin in need of exfoliation” (Br. 14). “Because the present invention addresses the application of the mannose phosphate to a type of skin different from that disclosed in the reference, there . . . can be no implicit anticipation . . . by the reference” (*id.*).

This argument is not persuasive. Claim 1 merely requires applying mannose phosphate to skin, *any* skin, in an amount effective to exfoliate the skin. Ferguson describes application of mannose phosphate to wounded or photo-damaged skin. There is no dispute on this record that the amounts of mannose phosphate in the preparations disclosed by Ferguson would be effective to produce exfoliation of that skin. Thus, we agree with the Examiner that Ferguson inherently anticipates the invention of claim 1.

The Examiner’s rejection is affirmed with respect to claim 1. As discussed above claims 4-6 fall accordingly.

Claims 7, 10-12 and 19-21

Representative claim 7 is directed to a method of increasing levels of glycosaminoglycans in skin by applying a mannose phosphate to skin in need of such an increase.

Appellants argue essentially that “conditions associated with reduced levels of glycosaminoglycans” (Br. 8) include “photo-aging, which includes the symptoms of dry skin, lines and wrinkles” (Br. 9); photo-aging as

described in the Specification, and in Appellants' Exhibits A³ and B,⁴ and photo-damage associated with fibrotic disorders referred to in Ferguson are "mutually exclusive conditions" (Br. 10), thus, "[t]he skin to which a mannose phosphate would be applied according to the reference (skin exhibiting wounds or fibrotic disorders) is clearly not the same skin to which a mannose phosphate would be applied according to the methods of the present invention (dry and/or wrinkled skin associated with aging)" (Br.11). Again, Appellants argue "[b]ecause the present invention addresses application of the mannose phosphate to a type of skin different from that disclosed in the reference, there can be no anticipation of the present claims" (Br. 11).

This argument is not persuasive. The issue is not whether photo-aging and photo-damage are mutually exclusive conditions.⁵ The issue is simply whether wounded skin or photo-damaged skin is skin in need of increased levels of glycosaminoglycans.

³ Gary J. Fischer et al., *Molecular Mechanisms of Photoaging in Human Skin In Vivo and Their Prevention by All-Trans Retinoic Acid*, Photochemistry and Photobiology Abstract (February 1999).

⁴ http://www.betterhealth.vic.gov.au/bhcv2/bhcarticles.nsf/pages/Ageing_the_skin?open; accessed no later than January 27, 2006.

⁵ For the record, we have considered Exhibits A and B, submitted by Appellants as evidence that it is technically incorrect to equate "photo-aging" as the term is used in the art generally, and in the present specification specifically, and 'photodamage' as it relates to the [Ferguson] reference" (Br. 9). We note that the Exhibits A and B confirm that wrinkles and dry skin are associated with photo-aging, but neither Exhibit actually says anything about the term photo-damage. Therefore, they do nothing to support Appellants' assertion that Ferguson's photo-damage and photo-aging are "mutually exclusive conditions" (Br. 10).

As discussed above, enhanced synthesis of glycosaminoglycans results in increased water retention in the skin, and therefore, skin plumping and concurrent reduction in the appearance of lines and wrinkles (FF 2). The Examiner has provided evidence⁶ that establishes that the terms “photoaging” and “photodamage” are used interchangeably to describe changes in the skin due to repeated sun exposure, and also established that photo-damaged skin exhibits xerosis (i.e., dryness), lines, and wrinkles, among other things. Thus, we agree with the Examiner that photo-damaged skin is skin in need of increased levels of glycosaminoglycan synthesis. Ferguson discloses applying a mannose phosphate to photo-damaged skin (FF 5), in amounts asserted to be effective to enhance synthesis of glycosaminoglycans (FF 3, 4, 7). Therefore, we agree with the Examiner that Ferguson inherently anticipates the invention of claim 7.

The Examiner’s rejection is affirmed with respect to claim 7. As discussed above claims 10-12 and 19-21 stand or fall accordingly.

SUMMARY

We agree with the Examiner that Ferguson describes the claimed invention. We therefore affirm the Examiner’s anticipation rejection of claims 1, 4-7, 10-14, and 17-19 under 35 U.S.C. § 102(b) as anticipated by Ferguson.

⁶ “Guidelines of Care for Photoaging/Photodamage,” Guidelines/Outcomes Committee of the American Academy of Dermatology, 35 J. Am. Acad. Dermatol. 462-464 (1996).

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No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv) (2006).

AFFIRMED

saj

KAREN A. LOWNEY, ESQ.
ESTEE LAUDER COMPANIES
125 PINELAWN ROAD
MELVILLE, NJ 11747